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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,540	01/19/2001	Robert Austin Owens	2001US301	1414

7590 03/16/2004
Krishna G. Banerjee
70 Meister Avenue
Somerville, NJ 08876

EXAMINER

COLE, MONIQUE T

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/765,540

Applicant(s)

OWENS ET AL.

Examiner

Monique T. Cole

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 15, 16, 17 & 18 rejected under 35 U.S.C. 103(a) as being unpatentable over USP 5,389,546 to Becket (herein referred to as "Becket") in view of USP 5,667,760 to Sweeney (herein referred to as "Sweeney") & "Potentiometric pH-stat titration: Importance of an inert atmosphere in reaction vessels when using alkali titrant." by Ballantyne (herein referred to as "Ballantyne").

Becket discloses a method for determining alkalinity comprising: obtaining an aqueous basic solution of unknown concentration and known volume; adding aqueous acid solution of known acid concentration from a burette to the unknown solution until a pre-determined end-

point is obtained, whereupon the addition of acid solution is terminated. The volume of acid used is read and alkalinity of the sample fluid is calculated according to a specified relationship. The aqueous acid may be HCl (col. 9, line 22). The process may be automated or manual. See also col. 3, line 61-col. 4, line 46.

Becket teaches the invention substantially as claimed, but does not teach that the process is measured by normality.

Sweeney, however, teaches that normality can be determined by titration. Moreover, it is advantageous to use normality because it may be determined by titration without weighing anything and directly measures the most important property of a solution, such as its capacity to accept electrons per unit volume (col. 6, lines 7-27). Sweeney states exact measurements (volume, concentration of known solution) are required by this titration process. Sweeney further teaches titrant in an amount of 10 m. Thus, it would have been obvious to one having ordinary skill in the chemical arts to modify the Becket reference to include a normality calculation because Sweeney teaches that normality facilitates the process by excluding weighing. Also, it would have been obvious to one having ordinary skill in the art to ensure the accuracy of the titration method, as indicated by Sweeney, by ensuring that exact measurements were made. It is the Examiner's position that it would have been obvious to one of ordinary skill to measure the unknown solution to within ± 0.02 N and weigh the reactants to $\pm 0.001\%$ given the teaching of Sweeney that the measurements be exact. Moreover, one of ordinary skill would understand the quantitative importance of having each variable of the titration method as accurate as possible.

The combination of Becket and Sweeney does not disclose that about 1-10% of the original base is left as residual non-neutralized base. However, it is well known and appreciated in the chemical arts that titration is performed more slowly, or even stopped, as you begin to near the endpoint. This is done to prevent "over-titrating" the unknown beyond necessary and allows the acid to fully react with the base solution with the help of a stirrer. Such a step is particularly important when no stirrer is present.

The combination of Becket and Sweeney neglects to teach that the titration be performed in an inert atmosphere. However, Ballantyne teaches that it is known to perform titration in an inert atmosphere to eliminate error due the presence of air. Ballantyne teaches nitrogen as the protective inert atmosphere. Thus, given Ballantyne's teaching of increased precision obtained from titrating under inert conditions, it would have been obvious to one having ordinary skill to modify Becket in view of Sweeney to be performed in an inert atmosphere.

With regard to the instant claim's lack of refilling, it would have been obvious to eliminate this step as a means to make the titration process more efficient.

With regard to the instant claim's reference to the density of the developer solution, the weight and the volume are known, and thus one of ordinary skill in the art would know how to perform a simple mathematical operation to derive density.

Regarding the storage temperature of the acid titrant, while Becket does not specify the temperature at which the reactants are kept, it would have been obvious to one having skill in the art to keep the acid titrant at room temperature as this would be the easiest temperature at which to maintain the reactant.

With regard to claims 2 & 3, it would have been obvious to weigh the reactants in any order, as it has been held that selection of any order to performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04(IV)(C).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Becket in view of Sweeney & Ballantyne as applied to claims 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 15, 16, 17 & 18 above, and further in view of USP 5,340,541 to Jackson et al. (herein referred to as "Jackson").

Becket in view of Sweeney & Ballantyne fails to teach that the reactants are weighed in closed containers.

However, Jackson teaches a titration method that recognizes the clear advantage of utilizing closed containers within titrations. Namely, the use of closed containers eliminates erroneous results due to environmental moisture contamination or loss of material during the sample transfer process. Thus, given that it is well appreciated in the art that closed containers facilitate more accurate measurements as taught by Jackson, it would have been obvious to one having ordinary skill to modify the titration method as taught by the combination of Becket, Sweeney & Ballantyne to further include weighing the reactants in closed containers in order to obtain more results.

5. Claims 13 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becket in view of Sweeney & Ballantyne as applied to claims 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 15, 16, 17 & 18 above, and further in view of Re. 28970 to Shapiro (herein referred to as "Shapiro").

Becket in view of Sweeney & Ballantyne fails to teach that the burette has a plunger.

However, Shapiro teaches the use of a burette containing a plunger for the purpose of greater repetitive accuracy when dispensing liquids. The plunger-burette has the further advantages of providing increased safety, wide versatility, cleaning ease and being bubble-free. The plunger extends for about 75% of the burette length. See Figure 1. Thus, given the many noted advantages of the Shapiro plunger burette, it would have been obvious to one having ordinary skill in the art to modify the titration combination of Becket, Sweeney & Ballantyne to further include a plunger burette for the purpose of improving the dispensing accuracy, such as taught by Shapiro.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique T. Cole whose telephone number is 571-272-1255. The examiner can normally be reached on Monday-Thursday from 6:30 A.M. to 4:00 P.M.

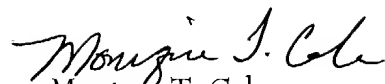
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/765,540

Page 7

Art Unit: 1743



Monique T. Cole

Monique T. Cole

Examiner

Art Unit 1743

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